Tesis

SIGMA METRICS PARAMETER KIMIA KLINIK LABORATORIUM SENTRAL RSUP Dr.M.DJAMIL PADANG

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SIGMA METRICS PARAMETER KIMIA KLINIK LABORATORIUM SENTRAL RSUP Dr. M. DJAMIL PADANG

ABSTRAK

Latar Belakang : *Sigma metrics* merupakan suatu metode penilaian kualitas dan pengembangan laboratorium, yang dapat mengukur tampilan proses dan *outcome* yang dihasilkan laboratorium secara kuantitatif. *Sigma metrics* dapat mengukur *error* yang terjadi persatu juta peluang. *Sigma metrics* dapat mengukur proses analitik, dengan mengukur koefisien variasi, bias, dan *Total allowable error* (TAE). *Sigma* yang diharapkan adalah *six sigma* atau lebih, yang menjamin hanya 3,4 *error* persatu juta peluang. Tujuan penelitian ini adalah menghitung sigma parameter kimia klinik di laboratorium sentral RSUP Dr. M. Djamil, Padang.

Metode : Penelitian ini adalah penelitian deskriptif terhadap data pemantapan mutu internal dan eksternal laboratorium sentral RSUP Dr. M. Djamil Padang. Penelitian ini dimulai bulan Juli 2016 sampai April 2017. Koefisien variasi diukur dari data pemantapan mutu internal kontrol normal bulan Mei-Juli dan November dan kontrol patologis bulan November. Bias dihitung dari hasil pemantapan mutu eksternal. TAE dilihat pada tabel yang ditetapkan oleh CLIA.

Hasil : Koefisien variasi terendah kalsium (2,5%) dan tertinggi kreatinin (6,79%); bias terendah asam urat (1,2%) dan tertinggi SGPT (16,74%), berdasarkan hasil pemantapan mutu laboratorium bulan Mei-Juli. Sigma tertinggi trigliserida (6,05%) dan terendah kreatinin (0,07%). Koefisien variasi terendah protein total (2,52%) dan tertinggi SGOT (6,4%), bias terendah albumin (0,23%) dan tertinggi bilirubin total (4,9%) pada pemantapan mutu laboratorium bulan November kontrol normal. Sigma tertinggi trigliserida (7,29%) dan terendah ureum (2,18%). Koefisien variasi terendah trigliserida (1,8%) dan tertinggi adalah HDL (4,77%). Bias terendah kalsium (0,5%) dan tertinggi HDL (4,73%) pada pemantapan mutu laboratorium November kontrol patologis. Sigma tertinggi trigliserida (12,39%) dan terendah albumin (2,12%).

Simpulan : Parameter dengan sigma >3 untuk kontrol normal antara lain glukosa, HDL, trigliserida, asam urat, protein total, bilirubin total, dan SGPT. Parameter dengan sigma >3 untuk kontrol patologis antara lain glukosa, HDL, trigliserida, ureum, kreatinin, asam urat, kalsium, bilirubin total, SGOT, dan SGPT.

Kata Kunci : Bias, Koefisien variasi, *Sigma metrics*, *Total allowable error*

SIGMA METRICS OF CLINICAL CHEMISTRY PARAMETERS IN DR. M. DJAMIL PADANG HOSPITAL CENTRAL LABORATORY

ABSTRACT

Background: *Sigma metrics is a method to assess quality and development of laboratory, it is used to certify process performance and outcome from laboratory. Sigma metrics ables to count error in part per million. Sigma metrics also ables to analyze analytical process by measure coefficient variation (CV), bias, and Total allowable error (TAE). Six sigma or more is the value that all laboratories should have, it ensures that only 3,4 error per million opportunities. This study aim to assess sigma metrics of clinical chemistry parameters in Dr. M. Djamil Padang Hospital Central Laboratory.*

Methods: *This is a descriptive study to an internal and external quality assurance in Dr. M. Djamil Padang Hospital Central Laboratory. This study was conducted from Juni 2016 to April 2017. Coefficient of variation was measured from internal and external data for normal control from May-July and November and patology control in November. Bias was quantified from results of external quality assurance. TAE was seen from CLIA table.*

Results: *Calcium showed the lowest CV (2,5%) in laboratory quality assurance in May-July, and the highest was creatinin (6,79%); uric acid showed the lowest bias (1,2%) and the highest was ALT (16,74%). Triglyceride showed the highest sigma (6,05%) and the lowest was creatinin (0,06%). Total protein had lowest CV (2,52%) and ALT had highest (6,4%) for normal control in November. Albumin had lowest bias and and the highest was total bilirubin (4,9%). Triglyceride had the highest sigma (7,29%) and ureum had the lowest (2,18%). In November, for patology control, triglyceride showed the lowest CV (1,8%) and HDL showed the highest (4,77%). The lowest bias was seen on calcium (0,5%) and the highest was HDL (4,73%). Triglyceride had highest sigma (12,39%) and albumin was the lowest (2,12%)*

Conclusion: *Glucose, HDL, uric acid, total protein, total bilirubin, and ALT had sigma > 3 for each parameter in normal control. In patology control; glucose, HDL, triglyceride, ureum, creatinin, uric acid, calcium, total bilirubin, AST, and ALT had sigma > 3 for each parameter.*

Keywords: *Bias, Coefficient of variation, Sigma metrics, Total allowable error*